

DESCRIPTIVE MODEL OF BUSHVELD Fe-Ti-V

By Norman J Page

SYNONYM Stratiform mafic-ultramafic Fe-Ti-V.DESCRIPTION Layers of Ti-V-rich magnetite in upper parts of large repetitively layered mafic-ultramafic intrusions (see fig. 5).GEOLOGICAL ENVIRONMENTRock Types Norite, gabbro-norite, dunite, harzburgite, peridotite, pyroxenite, troctolite, anorthosite, and gabbro.Textures Cumulate textures; layers with gradational proportions of euhedral crystals; locally with poikilitic matrix.Age Range Generally Precambrian, but may be as young as Tertiary.Depositional Environment Intruded into granitic gneiss or into volcanic-sedimentary terrane.Tectonic Setting(s) Cratonal, mostly in Precambrian shield areas.Associated Deposit Types Bushveld Cr, Stillwater Ni-Cu, and Merensky Reef PGE. PGE placers.DEPOSIT DESCRIPTIONMineralogy Vanadium-bearing magnetite ± ilmenite ± traces of sulfides.Texture/Structure Massive magnetite-ilmenite, cumulus textures.Ore Controls Layers near top of intrusion. Layers may be cut by pipes and veins rich in ilmenite.Weathering Blocks of magnetite in soil and alluvium.Geochemical Signature Fe, Ti, V.EXAMPLES

Bushveld Complex, SAFR

(Williams, 1969; Molyneux, 1969)